

Reg. No. :

Name :

Fourth Semester B.Sc Degree Examination, August 2022

First Degree Programme under CBCSS

Chemistry

Complementary Course for Homescience

CH 1431.5 : PHYSICAL AND SUSTAINABLE CHEMISTRY

(2020 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions. Each question carries **1** mark.

1. What are rodenticides?
2. Write the structure of BHC.
3. What is Bhopal gas?
4. What are the different allotropes of carbon?
5. What are nano materials?
6. What is the adsorbent in column chromatography?
7. Mention one electrical property of a colloid.

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8. Is NaCl solution a colloid? Why?
9. What is R_f value in chromatography?
10. What is green chemistry?

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions. Each question carries **2** marks.

11. Mention two greenhouse gases.
12. What is PAN? Explain.
13. What is the importance of ozone layer?
14. What is coprecipitation?
15. List out any two chemical pollutants.
16. Differentiate between adsorption and absorption.
17. What is the principle chromatography?
18. What is Hardy-Schultz rule?
19. What is coagulation?
20. Name two optical properties of colloids.
21. What is top-down and bottom-up approach in nano-material synthesis?
22. What are the different types of liquid crystals?
23. What are the factors affecting the purity of water?

24. What are the different types of soil pollution?
25. What is the principle of paper chromatography?
26. What are multi molecular colloids?

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. Each question carries **4** marks.

27. Explain the different classification of colloids.
28. What is condensation method for preparation of colloids?
29. Briefly explain the cleaning action of soap.
30. Explain how chromatography is used for separation of amino acids.
31. What are the conventional waste disposal technique and its limitations?
32. Explain the different types of nanosystems existing in nature.
33. Explain the formation of acid rain.
34. Explain the chemistry behind ozone layer depletion.
35. Discuss the principle of electro dialysis and its application in water purification.
36. Explain the principle of gas chromatography and its use in separation of proteins.
37. What is green house effect?
38. What are the different purification methods of colloids?

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. **Each** question carries **15** marks.

39. Explain the twelve principles of green chemistry.
40. Discuss the application of nanomaterials in medical field.
41. Explain the different types of physical properties of colloidal solutions.
42. Discuss the different types of air pollution and how it can be prevented.
43. Explain the different methods of treatment of industrial waste water.
44. What are the different applications of adsorption?

(2 × 15 = 30 Marks)